

***Interactive comment on “Comment on
“Reinterpreting aircraft measurements in
anisotropic scaling turbulence” by Lovejoy et
al. (2009)” by E. Lindborg et al.***

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We thank the reviewer for the positive review and we are glad that the reviewer thinks that the material presented in our comment is "sufficient for publication". The reviewer regrets that we do not attempt to make a complete deconstruction of the arguments by Lovejoy et al. Our comment is focused on the suggestion of Lovejoy et al. of "artefacts in the observational evidence". We do not think that it is necessary to deconstruct their theoretical analysis in order to disprove their criticism of previous interpretations of the spectral measurements. Apart from referencing the very extensive empirical evidence in favour of an approximate k^{-3} synoptic spectrum we think that the very straightforward

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argument presented in the second last paragraph definitely disproves their hypothesis. It is enough to point out that an inaccuracy or uncertainty of 100 m with respect to the vertical position of the aircraft can never explain a supposed wind shift of the order of 10 m/s, for the simple reason that the typical wind shift over a vertical distance of 100 m is less than 1 m/s. In the previous version of our manuscript we referenced Alisse and Sidi (2000) to support this. In the revised manuscript we have added one reference: Lovejoy et al. 2007. From their figure 1 it is very clear that a typical wind variation over a vertical distance of 100 m is less than 1 m/s. Thus, it is quite clear that vertical variations of the order of 100 m of the aircraft trajectory cannot cause any large error in a measured wind difference of the order of 10 m/s.

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 22331, 2009.

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